

Section 8.5
Multiplication and Division of Radicals

1. _____ and _____ Property with Radicals

Multiply $(8\sqrt{5})(3\sqrt{11})$.

We can rearrange the order and grouping of numbers in a product by applying the _____ and _____ properties.

2. _____ Property with Radicals

Multiply $\sqrt{2}(\sqrt{3} + \sqrt{7})$.

We can solve the product by applying the _____ property.

3. _____ and _____ Property with Radicals

Multiply $7\sqrt{3}(3\sqrt{11} + 5\sqrt{2})$.

We can solve the product by applying the _____ and _____ properties.

4. FOIL Method with Radicals

Multiply $(\sqrt{2} + 7)(\sqrt{11} + 9)$.

We can solve the product by applying the FOIL method.

5. $(x + y)(x - y) = x^2 - y^2$ with Radicals

Multiply $(8 - \sqrt{5})(8 + \sqrt{5})$.

We can solve the product by applying the formula $(x + y)(x - y) = x^2 - y^2$.

6. Rationalizing the Denominator with Monomial in Numerator

Rationalize the denominator in the expression $\frac{\sqrt{5}}{\sqrt{2} - \sqrt{5}}$.

To remove the two radicals in the denominator, we must multiply both the numerator and denominator by the conjugate, $\sqrt{2} + \sqrt{5}$. That way, when we multiply $\sqrt{2} - \sqrt{5}$ and $\sqrt{2} + \sqrt{5}$, we will can use the formula $(x + y)(x - y) = x^2 - y^2$.

7. Rationalizing the Denominator with Binomial in Numerator

Rationalize the denominator in the expression $\frac{8 + \sqrt{3}}{3 - \sqrt{3}}$.

To remove the two radicals in the denominator, we must multiply both the numerator and denominator by the conjugate, $7 + \sqrt{3}$. That way, when we multiply $7 - \sqrt{3}$ and $7 + \sqrt{3}$, we will can use the formula $(x + y)(x - y) = x^2 - y^2$.